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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/655,609	09/06/2000	Avneesh Agrawal	PA000442	9036
23696	7590	01/16/2004	EXAMINER	
Qualcomm Incorporated Patents Department 5775 Morehouse Drive San Diego, CA 92121-1714			NGUYEN, BRIAN D	
			ART UNIT	PAPER NUMBER
			2661	

DATE MAILED: 01/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/655,609

Applicant(s)

AGRAWAL ET AL.

Examiner

Brian D Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on the amendment filed 10/20/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-17,20,22 and 23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6,9-17,20,22 and 23 is/are rejected.
- 7) ☒ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: *proposed drawing correction*.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 3-4, 6, 9-15, 17, 20, and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dahlman et al (6,222,875) in view of Palenius et al (6,532,250).

Regarding claims 1, 17, Dahlman discloses a method for recovering data transmitted on a physical channel, wherein a channelization code used for the physical channel is not known at the time of the data recovery, the method comprising: receiving and processing a modulated signal to provide received samples (see figure 1); selecting a hypothesized channelization code (the common code) for processing the physical channel; processing the received samples with the hypothesized channelization code to generate partially processed symbols (see figure 5 and col. 5, line 66-col. 6, line 7); storing intermediate results representative of the partially processed symbols (see 20 of figure 4; col. 3, lines 14-17; and col. 5, lines 43-48); determining an actual channelization code used for the physical channel; and processing the intermediate results in accordance with the actual channelization code and the hypothesized channelization code to provide final results (see col. 6, lines 12-25); Dahlman implicitly disclose selectively combining the final results from multiple symbol periods to obtain a recovered symbol (see col. 6, lines 19-25). In addition, Palenius explicitly discloses selectively combining the final results from multiple symbol periods to obtain a recovered symbol (see col. 2, lines 42-58). Therefore, it

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would have been obvious to a person of ordinary skill in the art at the time the invention was made to combine the final results as taught by Palenius in the system of Dahlman because without combining the final results the symbol will not completely be recovered.

Regarding claim 3, Dahlman in view of Palenius does not specifically disclose an encoding performed in accordance with a space time block coding transmit antenna diversity (STTD) mode. However, to apply an encoding method based on a standard such as WCDMA standard is a matter of choice. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to encode data in accordance with STTD mode so that the system can interface with other systems using WCDMA standard.

Regarding claims 4 and 15, Dahlman discloses discovering the received samples with the hypothesized channelization code to generate discovered symbols, demodulating the discovered symbols with the pilot estimates to generate the partially processed symbols; despreading the received samples with a pilot despreading code, and integrating the despread pilot samples over a length of the pilot despreading code to obtain pilot symbols that are then to generate the pilot estimates (see 16 & 18 of figure 1; channel estimates of figure 4; figure 5; col. 5, line 66-col. 6, line 25).

Regarding claim 6, Dahlman discloses combining partially processed symbols from a plurality of demodulation elements (RAKE fingers) assigned to process the physical channel to generate the intermediate results (see col. 5, line 43-48).

Regarding claims 9-12, Dahlman discloses the hypothesized channelization code is a member of a set of channelization codes that may be used to generate the actual channelization code, and wherein the hypothesized channelization code has a length that is shorter or equal to

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that of the actual channelization code, wherein the hypothesized channelization code can be used to generate all channelization codes in the set, wherein the hypothesized channelization code is an orthogonal variable spreading factor (OVSF) code, wherein the hypothesized OVSF code has a largest spreading factor among the channelization codes in the set (see figure 3; col. 5, lines 44-46; and col. 6, lines 4-7).

Regarding claims 13 and 14, Dahlman implicitly discloses spreading factor (level) ranging from four to 512 (see figure 3) (spreading factor 512 not shown in figure 3 but is the W-CDMA standard).

Regarding claims 20 and 22-23, claims 20 and 22-23 are apparatus claims that have substantially all the limitations of the method claims 1, 4, and 6. Therefore, they are subject to the same rejection.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dahlman et al (6,222,875) in view of Palenius et al (6,532,250) as applied to claims 1 and 4 above, and further in view of Kleider et al (6,240,282).

Regarding claim 5, Dahlman in view of Palenius does not disclose performing dot and cross product. However, performing dot and cross product in a system such as WCDMA is well known in the art. Kleider discloses performing those products (see claims 25 and 31). Therefore, it would have been obvious to one skilled in the art to perform dot and cross product so that different modes can be used in the communication system.

4. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dahlman et al (6,222,875) in view of Palenius et al (6,532,250) as applied to claims 1, 4, and 15 above, and further in view of Sato (6,088,324).

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Regarding claim 16, Dahlman in view of Palenius does not disclose the pilot estimates are generated by interpolating or extrapolating the pilot symbols. However, Sato discloses interpolating/extrapolating the pilot symbols to generate the pilot estimates (see col. 8, lines 37-60). Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to interpolating/extrapolating the pilot symbols as taught by Sato in the system of Dahlman in view of Palenius to generate the pilot estimates in order to recover data symbols.

Allowable Subject Matter

5. Claims 7-8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian D Nguyen whose telephone number is (703) 305-5133. The examiner can normally be reached on 7:30-6:00 Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doug Olms can be reached on (703) 305-4703. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

A handwritten signature in black ink, appearing to read 'Brian Nguyen', with a stylized flourish at the end.

Brian Nguyen
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January 7, 2004